

Abstract

An angle θ_1 between the peripheral direction edge section of each permanent magnet (3) or the pole center side edge section of rotor surface adjacent section of non-magnetic layer (4) continuous or adjacent to the peripheral direction edge section of each permanent magnet (3) and between poles, and an angle θ_2 between pole center side edge section of the rotor surface adjacent section of the second non-magnetic layer (5) and the between poles, are determined to be

$$0 < \theta_1 < 180/(5 \cdot P_n)$$

and

$$180/(5 \cdot P_n) \leq \theta_2 \leq 180 \times 2/(5 \cdot P_n)$$

or

$$0 < \theta_1 < 180/(7 \cdot P_n)$$

and

$$180/(7 \cdot P_n) \leq \theta_2 \leq 180 \times 2/(7 \cdot P_n)$$

where a pole pair number is P_n .

Therefore, specific order, for example 5-th order and 7-th order, harmonics component of the magnetic flux distribution waveform (induction voltage waveform) can be reduced and unnecessary radial force and thrust force can be prevented from occurrence, while sufficient magnetic flux can be maintained.